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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/558,945	11/30/2005	Yusuke Konagai	YAMA:111	6756
37013 7590 12/10/2007 ROSSI, KIMMS & McDOWELL LLP. P.O. BOX 826 ASHBURN, VA 20146-0826			EXAMINER PAUL, DISLER	
			ART UNIT 2615	PAPER NUMBER
			MAIL DATE 12/10/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/558,945	Applicant(s) KONAGAI, YUSUKE	
	Examiner Disler Paul	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/21;12/13/06</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-2 are rejected under 35 U.S.C. 102(a) as being anticipated by Kaji et al. (US 7,027,600).

Re claim 1, Kaji et al. disclose of the array speaker system in which signals having prescribed time differences are supplied to a plurality of speaker units arranged in an array so as to perform directivity control on audio signal beams emitted from the speaker units (col.6 line 55-60; fig.1-2/to perform audio simulation for generating sound to be heard at prescribed point), said array speaker system comprising: a delay memory for delaying an input signal in units of a sampling period (col.12 line 24-29; line 45-60; col.13 line 30-45; fig.4 and col.15 line 15-35; fig.2 wt (32)); a control means for calculating delay times to be applied to the signals respectively supplied to the speaker units (fig.2 wt (31); col.12 line 45-50); and an interpolation processing means for performing interpolation processing on output of the delay memory based on the delay times calculated by the control means (fig.4-5; col.15 line 55 up col.16 line 20/delay tap coefficient to perform process interpolation), wherein an output of the interpolation processing means is supplied to each of the speaker units (fig.2,3,33 wt (6a,6b)).

Re claim 2, the array speaker system according to claim 1, wherein the delay memory has a plurality of delay taps that delay the input signal in units of the sampling frequency so as to impart different delay times to the input signal, thus providing delay output (col.15 line 28-35).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (US 7,027,600) and further in view of Chen (US 7,116,788 B1).

Re claim 3, the array speaker system according to claim 1 with interpolation (col.13 line 1-5), However, Kaji et al. fail to disclose of the wherein the interpolation processing means performs linear interpolation on the output of the delay memory. However, chen disclose of a system wherein similar technique of performing linear interpolation on the output of a pair of HRTF original signals (fig.3;col.4 line 12-25) for the purpose of generating new coefficient signals for determining target HRTF signals. thus, taking the combined teaching of Kaji et al. and Chen as a whole, it would have been obvious for one of the ordinary skill in the art to have modify Kaji et al. by incorporatin the performing linear interpolation on the output

of a pair of HRTF original signals for the purpose of generating new coefficient signals for determining target HRTF signals

5. Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji et al. (US 7,027,600) and further in view of Official Notice.

Re claim 4, the array speaker system according to claim 1, wherein an FIR filter is formed using the delay memory and the interpolation processing means (col.15 line 15-20), However, Kaji et al. fail to disclose of the filter being a low-pass filter. But, official notice is taken the limitation of having a low-pass filter for processing means is commonly known in the art, thus it would have been obvious for one of the ordinary skill in the art to have incorporating the having a low-pass filter for processing means for simulating audio signals.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Disler Paul whose telephone number is 571-270-1187. The examiner can normally be reached on 7:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP


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